

Organic Chemistry Intro Notes

Over 99% of all compounds are _____

Organic Chemistry is the study of _____

***Carbon is special because it will have four bonds and may bond to _____ as well as other elements (_____)

Carbon compounds can also have different arrangements even with the same chemical formula (ie. $\text{C}_2\text{H}_6\text{O}$)

Hydrocarbons (contain C & H)

Alkanes Characteristics:

- 1) general formula: C_nH_{2n+2}
- 2) insoluble in water
- 3) tetrahedral shape around carbons
- 4) boiling point increases as molecular mass increases
- 5) saturated hydrocarbons (all single bonds, no double or triple bonds)

1-4 carbons = gas

5-16 carbons = liquid

17 or more carbons = solid

Common Alkanes:

Methane	CH_4
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Ethane	C_2H_6
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Propane	C_3H_8
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Butane	C_4H_{10}
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Pentane	C_5H_{12}
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Hexane C_6H_{14}

Heptane C_7H_{16}

Octane C_8H_{18}

Nonane C_9H_{20}

Decane $\text{C}_{10}\text{H}_{22}$

*** note on carbons:

Primary Carbon = a carbon with only 1 other carbon bonded to it

Secondary Carbon = a carbon with 2 other carbons bonded to it

Tertiary Carbon = a carbon with 3 other carbons bonded to it

Quaternary Carbon = a carbon with 4 other carbons bonded to it

Alkene Characteristics:

- 1) general formula: C_nH_{2n}
- 2) trigonal planar shape around carbon
- 3) double bond ($C=C$)
- 4) insoluble in water
- 5) unsaturated hydrocarbons

Alkyne Characteristics:

- 1) general formula: C_nH_{2n-2}
- 2) linear bond angles around carbon
- 3) unsaturated hydrocarbon
- 4) triple bond (_____)
- 5) insoluble in water

Types of Rings:

A. Cyclic compounds

B. Aromatic compounds

Practical uses for benzene:

Used in disinfectants, medicines, TNT, aspirin

